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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,241	03/25/2005	Afshin Ziari	4590-383	6156

33308 7590 03/09/2007
LOWE HAUPTMAN GILMAN & BERNER, LLP
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ALEXANDRIA, VA 22314

EXAMINER

PATEL, REEMA

ART UNIT	PAPER NUMBER
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2812

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/529,241

Applicant(s)

ZIAEI ET AL.

Examiner

Reema Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 12 is/are rejected.
- 7) ☒ Claim(s) 3-11 and 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/25/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 3/25/05. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in/ this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Seki (U.S. 6,486,425).
5. Regarding claim 1, Seki discloses the following claimed elements:
 - A process for producing a microswitch comprising at least the following steps:
 - Producing a first subassembly having a first substrate (11a, Fig 3B) and at least conducting lines (13-14, Fig 3B) and a control electrode (12, Fig 3B);
 - Producing a second subassembly having a second substrate (101, Fig 3D), at least one stop layer (102, Fig 3D), a layer of material. (103, Fig

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3D), at least one electrically conducting layer (28, Fig 3F), and at least one high-permittivity layer (27, Fig 3F);

- Assembling the two subassemblies mechanically and electrically (Fig 3G, col 4, lines 58-60);
- Eliminating the second substrate down to the stop layer (Fig 3H, col 4, lines 60-65);
- Final. cutting of the layer to the dimensions of a membrane by photolithography and etching (col 4, lines 66-col 5, lines 1-3);

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki (U.S. 6,486,425) as applied to claim 1 above, and further in view of Yang et al. (U.S. 6,686,292 B1) and Van Der Zaag et al. (U.S. 5,904,996).

8. Regarding claim 2, Seki, which has been discussed above, discloses the limitations of claim 1. Yet, Seki does not disclose that the high-permittivity layer is deposited by a sputtering or sol-gel process. However, according to Yang et al., it was known in the art to use sputtering to deposit insulating films (col 5, lines 63-67). Additionally, according to Van Der Zaag et al., sputter deposition is a preferred

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deposition method since it is highly compatible with large scale, low-price industrial production (col 2, lines 27-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Seki with deposition of a high permittivity layer using sputtering as taught by Yang et al. and Van Der Zaag et al. so as to use a deposition method compatible with large scale, low-price industrial production.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki (U.S. 6,486,425) as applied to claim 1 above, and further in view of Andersson et al. (U.S. 6,456,190 B1).

10. Regarding claim 12, Seki, which has been discussed above, discloses the limitations of claim 1. Yet, Seki does not disclose a process for producing a plurality of microswitches. However, Andersson et al. discloses that multiple devices can be produced on a single common substrate through a batch process for efficient mass production (col 3 lines 63-67, col 4 lines 1-5). Taking this and the method of producing a microswitch as taught by Seki, it would have been obvious to one having ordinary skill in the art at the time the invention was made modify the invention of Seki to with the principles of a batch process, as taught by Andersson et al so as to achieve efficient mass production.

Allowable Subject Matter

11. Claims 3 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claim 3 contains allowable subject matter because of the limitation of each mesa being covered with a thickness of metal identical to that of the conducting lines. Claims 4-6 depend on claim 3.

13. Claim 7 contains allowable subject matter because of the limitation that at least one deformable metal deposition is carried out on the first subassembly. Claims 8-11 and 13-15 depend on claim 7.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goldsmith et al. (U.S. 5,619,061) discloses a microswitch using a dielectric membrane to prevent a movable metal film from touching fixed electrodes. Tilmans et al. (U.S. 6,297,072 B1) discloses bonding techniques used in producing microswitches.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reema Patel whose telephone number is 571-270-1436. The examiner can normally be reached on M-Th, 7:30-5:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSP

R. S. Patel

SCOTT B. GEYER
PRIMARY EXAMINER

SBG
3/5/07